What is Claimed is:

1. A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract by applying a current-controlled electrical pulse to the neuromuscular tissue, comprising:

a voltage sensor to detect a voltage across the neuromuscular tissue being stimulated; and

circuitry configured to compare the voltage with a predetermined voltage threshold and to adjust the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold, such that the voltage does not exceed the predetermined voltage threshold.

2. The neuromuscular stimulator defined in claim 1, wherein the voltage threshold is adjustable.

3. The neuromuscular stimulator defined in claim 1, wherein the circuitry is configured to set the voltage threshold based on a current level associated with the current-controlled pulse.

4. The neuromuscular stimulator defined in claim 3, wherein the circuitry is configured to prepare a set of voltage thresholds and associated respective current levels.

5. The neuromuscular stimulator defined in claim 1, wherein the circuitry is configured to calculate electrode resistance, said electrode

resistance being voltage limit value divided by current value.

6. The neuromuscular stimulator defined in claim 5, wherein the circuitry is configured to determine an increment of adjustment of voltage based on the electrode resistance.

7. The neuromuscular stimulator defined in claim 5, wherein the circuitry is configured to associate the electrode resistance with the current level of the current-controlled pulse.

8. The neuromuscular stimulator defined in claim 7, further comprising:

a memory device to store the electrode resistance and the associated current level.

9. The neuromuscular stimulator defined in claim 5, further comprising:

a display device to display the electrode resistance and the associated current level.

10. The neuromuscular stimulator defined in claim 1, wherein the circuitry is configured to calculate capacitance of said tissue, said capacitance being the ratio of the current and the time rate of change of the voltage during an individual electrical stimulating pulse.

11. The neuromuscular stimulator defined in claim 10, wherein the circuitry is configured to

determine the increment of adjustment based on the capacitance.

12. The neuromuscular stimulator defined in claim 10, wherein the circuitry is configured to associate the capacitance with the current level of the current-controlled pulse.

13. The neuromuscular stimulator defined in claim 10, further comprising:

a memory device to store the capacitance and the associated current level.

14. The neuromuscular stimulator defined in claim 10, further comprising:

a display device to display the capacitance and the associated current level.

15. The neuromuscular stimulator defined in claim 1, further comprising:

a memory device to store an event characterized by the voltage being found to meet the predetermined voltage threshold.

16. The neuromuscular stimulator defined in claim 1, wherein the neuromuscular stimulator is configured to determine and store a time value during the electrical pulse when the voltage associated with the electrical pulse meets the predetermined voltage threshold.

17. The neuromuscular stimulator defined in claim 1, wherein the voltage sensor is configured to detect the voltage across the neuromuscular tissue at a leading edge of the electrical pulse.

18. The neuromuscular stimulator defined in claim 1, wherein the voltage sensor is configured to detect the voltage across the neuromuscular tissue at a trailing edge of the electrical pulse.

19. A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:

applying a current-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;

detecting a voltage across the neuromuscular tissue being stimulated;

comparing the voltage with a predetermined voltage threshold; and

adjusting the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold by the detecting, such that the voltage does not exceed the predetermined voltage threshold.

20. The method defined in claim 19, further comprising:

prior to comparing the voltage with a predetermined voltage threshold, setting the voltage threshold based on a current level associated with the current-controlled pulse.

21. The method defined in claim 20, further comprising:

prior to applying the current-controlled pulse to the neuromuscular tissue, preparing a set of voltage thresholds and associated respective current levels.

22. The method defined in claim 21, wherein preparing the set of voltage thresholds comprises:

setting a test value for the voltage threshold;

applying a first current pulse to the tissue to be stimulated;

iteratively varying the test value until the voltage level across the tissue is found to meet the test value; and

associating the voltage level with the respective current level in the set of voltage thresholds.

23. The method defined in claim 22, wherein preparing the set of voltage thresholds further comprises:

before the step of associating, multiplying the measured voltage level by a factor selected from a range between about 1.0 and 1.5.

24. The method defined in claim 19, further comprising:

after applying the current-controlled pulse to the neuromuscular tissue, calculating

electrode resistance, said electrode resistance being voltage limit value divided by current value.

25. The method defined in claim 24, wherein the step of adjusting the current-controlled pulse further comprises:

determining an increment of adjustment of voltage based on the electrode resistance.

26. The method defined in claim 24, further comprising:

after calculating the electrode resistance, associating the electrode resistance with the current level of the current-controlled pulse.

27. The method defined in claim 26, further comprising:

after the step of associating the electrode resistance with the current level of the current-controlled pulse, storing the electrode resistance and the associated current level in a database.

28. The method defined in claim 24, further comprising:

after the step of associating the electrode resistance with the current level of the current-controlled pulse, displaying the electrode resistance and the associated current level.

29. The method defined in claim 19, further comprising:

after the step of applying a current-controlled pulse to the neuromuscular tissue, calculating capacitance of said tissue, said capacitance being the ratio of the current and the time rate of change of the voltage.

30. The method defined in claim 29, wherein the step of adjusting the current-controlled pulse further comprises:

determining the increment of adjustment based on the capacitance.

31. The method defined in claim 29, further comprising:

after the step of calculating the capacitance, associating the capacitance with the current level of the current-controlled pulse.

32. The method defined in claim 29, further comprising:

after the step of associating the capacitance with the current level of the current-controlled pulse, storing the capacitance and the associated current level in a database.

33. The method defined in claim 29, further comprising:

after the step of associating the capacitance with the current level of the current-controlled pulse, displaying the capacitance and the associated current level.

34. The method defined in claim 19, further comprising:

storing an event in memory characterized by the voltage being found to exceed the predetermined voltage threshold.

35. The method defined in claim 19, wherein the detecting a voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a leading edge of the electrical pulse.

36. The method defined in claim 19, wherein the detecting the voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a trailing edge of the electrical pulse.

37. A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract by applying a voltage-controlled electrical pulse to the neuromuscular tissue, comprising:

a current sensor to detect the current applied to the neuromuscular tissue being stimulated; and

circuitry configured to compare the current with a predetermined current threshold and to adjust the voltage-controlled pulse if the current is found to meet the predetermined current threshold by the detecting, such that the current does not exceed the predetermined current threshold.

38. A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:

applying a voltage-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;

detecting a current through the neuromuscular tissue being stimulated;

comparing the current with a predetermined current threshold; and

adjusting the voltage-controlled pulse if the current is found to meet the predetermined current threshold by the detecting, such that the current does not exceed the predetermined current threshold.

39. A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract with a series of electrical pulses applied to the neuromuscular tissue during a treatment period, comprising:

a real time clock configured to supply data corresponding to the time of day during the treatment period;

a programmable calendar configured to store a parameter for defining said series of electrical pulses, the parameter having a reference to a respective time of day during the treatment period;

a control circuit configured to apply said series of electrical pulses defined by the parameter at the respective time of day.

40. The neuromuscular stimulator defined in claim 39, wherein the parameter is a time period during

which said series of electrical pulses are applied to the neuromuscular tissue.

41. The neuromuscular stimulator defined in claim 40, wherein the time period comprises a start time with reference to the time of day and a duration with respect to the start time, and wherein the control circuit is configured to apply the series of electrical pulses beginning at the start time and extending for the duration.

42. The neuromuscular stimulator defined in claim 40, wherein the time period comprises a start time with reference to the time of day, a first duration with respect to the start time, and a second duration with respect to the first duration, and wherein the control circuit is configured to apply the series of electrical pulses beginning at the start time and continuing for the first duration, and discontinuing the series of electrical pulses during the second duration.

43. The neuromuscular stimulator defined in claim 40, wherein the time period comprises a first time with reference to the time of day and a second time with reference to the time of day, and wherein the control circuit is configured to apply the series of electrical pulses beginning at the first time and discontinuing the series of electrical pulses at the second time.

44. The neuromuscular stimulator defined in claim 39, wherein the parameter is a time period corresponding to the pulse width for each pulse in the series of electrical pulses.

45. The neuromuscular stimulator defined in claim 39, wherein the parameter is a time period corresponding to the pulse interval between each pulse in the series of electrical pulses.

46. The neuromuscular stimulator defined in claim 39, wherein the parameter is a voltage corresponding to the pulse height for each pulse in the series of electrical pulses.

47. The neuromuscular stimulator defined in claim 39, wherein the real time clock is configured to supply data corresponding to a week during said treatment period.

48. The neuromuscular stimulator defined in claim 39, wherein the real time clock is configured to supply data corresponding to a day of the week during said treatment period.

49. The neuromuscular stimulator defined in claim 39, wherein the real time clock is configured to supply data corresponding to the month of the year during said treatment period.

50. The neuromuscular stimulator defined in claim 49, wherein the real time clock is configured to

supply data corresponding to a day of the month during said treatment period.

51. The neuromuscular stimulator defined in claim 39, wherein the real time clock is configured to supply data corresponding to a day of the year during said treatment period.

52. A method of stimulating neuromuscular tissue of the gastrointestinal tract with a series of electrical pulses applied to the neuromuscular tissue during a treatment period, comprising:

supplying data corresponding to the time of day during the treatment period;

storing a parameter for defining said series of electrical pulses, the parameter having a reference to a respective time of day during the treatment period; and

applying said series of electrical pulses defined by the parameter at the respective time of day.

53. The method defined in claim 49, wherein supplying the time of day comprises:

providing a real time clock.

54. The method defined in claim 52, wherein storing the parameter further comprises:

providing a programmable calendar for storing the parameter.

55. The method defined in claim 52, wherein storing the parameter further comprises:

storing the parameter on the programmable calendar.

56. The method defined in claim 52, wherein the parameter is a time period, and wherein the storing the parameter further comprises:

storing the time period during which said series of electrical pulses are applied to the neuromuscular tissue.

57. The method defined in claim 56, wherein the storing the time period comprises:

storing a start time with reference to the time of day, and storing a duration with respect to the start time; and

applying the series of electrical pulses beginning at the start time and extending for the duration.

58. The method defined in claim 56, wherein the storing the time period comprises:

storing a start time with reference to the time of day, storing a first duration with respect to the start time, and storing a second duration with respect to the first duration; and

applying the series of electrical pulses beginning at the start time and continuing for the first duration, and discontinuing the series of electrical pulses during the second duration.

59. The method defined in claim 56, wherein the storing the time period comprises:

storing a first time with reference to the time of day, and storing a second time with reference to the time of day; and

applying the series of electrical pulses beginning at the first time and discontinuing the series of electrical pulses at the second time.

60. The method defined in claim 56, wherein the parameter is a time period, and wherein the storing the parameter further comprises:

storing the time period corresponding to the pulse width for each pulse in the series of electrical pulses.

61. The method defined in claim 56, wherein the parameter is a time period, and wherein the storing the parameter further comprises:

storing the time period corresponding to the pulse interval between each pulse in the series of electrical pulses.

62. The method defined in claim 56, wherein the parameter is a voltage, and wherein the storing the parameter further comprises:

storing the voltage corresponding to the pulse height for each pulse in the series of electrical pulses.

63. The method defined in claim 49, wherein the supplying data corresponding to the time of day further comprises:

supplying data corresponding to a week during said treatment period.

64. The method defined in claim 63, wherein the supplying data corresponding to the time of day further comprises:

supplying data corresponding to a day of the week during said treatment period.

65. The method defined in claim 49, wherein the supplying data corresponding to the time of day further comprises:

supplying data corresponding to the month of the year during said treatment period.

66. The method defined in claim 65, wherein the supplying data corresponding to the month of the year further comprises:

supplying data corresponding to the day of the month during said treatment period.

67. The method defined in claim 49, wherein the supplying data corresponding to the time of day further comprises:

supplying data corresponding to the day of the year during said treatment period.